

Please amend the application as follows:


IN THE CLAIMS

Please cancel claims 1, 2, 20-24, 43, 47, 54-56, 63-64, 79, 84-101, 112-115, 118, 129-132, 135 and 140-143, without prejudice.

Please amend claims 11-15, 25-31, 34, 39, 42, 44-45, 49, 80, 102, 106, 116, 119, 124, 133, 136, 139, 144, and 146 as follows:

11. (Amended) The method according to claim 4, wherein said delay amount of step (d) is a function of a duration of overflow within said portion of the new data stream.
12. (Amended) The method according to claim 4, wherein said delay amount of step (d) is a function of a duration of a single instance of overflow within said portion of the new data stream.
13. (Amended) The method according to claim 4, wherein said delay amount of step (d) is a function of a longest duration instance of overflow within said portion of the new data stream.
14. (Amended) The method according to claim 4, wherein said delay amount of step (d) is equal to a number of data packets of said portion during a longest duration instance of overflow within said portion of the new data stream.
15. (Amended) The method according to claim 4, wherein step (d) further comprises:  
causing a subsequent portion of said new data stream to be accelerated by an acceleration amount corresponding to said delay amount, if the new data stream is transmitted.

25. (2x Amended) A method for splicing digitally encoded data streams, including an old data stream and a new data stream, comprising:


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- (a) modifying a current timing reference of the new data stream to correspond with a splice-out point of the old data stream and a splice-in point of the new data stream, thereby forming a modified new data stream timing reference, wherein said modified new data stream timing reference further corresponds with a timing gap between a first decoding time for decoding a last frame of the old data stream and a second decoding time for decoding a first frame of the new data stream; and
- (b) aligning a portion of the new data stream with a portion of the old data stream according to said modified new data stream timing reference, such that a transition from the old data stream to the new data stream, during playback, will be substantially imperceptible.

26. (2x Amended) The method according to claim 25, wherein determining said modified new data stream timing reference includes:

- (i) determining said current timing reference of the new data stream;
- (ii) determining a delay between said current timing reference and a current decoding time of a frame of the new data stream;
- (iii) determining a new decoding time of said frame of the new data stream that corresponds with a sum of said current decoding time and an inter-frame delay between a decoding time for decoding a last frame of the old data stream and a decoding time for decoding a first frame of the new data stream; and
- (iv) determining said modified new data stream timing reference as said new decoding time of step (iii) minus said delay of step (ii).

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27. (3x Amended) The method according to claim 25, determining said modified new data stream timing reference includes:

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- (i) determining a program clock reference of a first packet of said new data stream;
- (ii) determining a delay between transmission of a first sequence header of said new data stream and a first decode time stamp DTS of a first frame of said new data stream;

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- (iii) determining a continuous DTS as a sum of said first DTS and an inter-frame delay; and
  - (iv) determining a new data stream real-time transmit time as said continuous DTS of step (iii) minus said delay of step (ii).

28. (3x Amended) The method according to claim 25, wherein said aligning in step (b) sets a start time for transmitting the portion of the new data stream that corresponds with a decoding time for decoding the portion of the old data stream.

29. (3x Amended) The method according to claim 25, wherein said aligning in step (b) sets a start time for a decoder buffer to begin receiving the portion of the new data stream that corresponds with a decoding time for decoding the portion of the old data stream.

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30. (2x Amended) The method according to claim 25, further comprising:

- (d) detecting a decoder buffer overflow condition that will result from said splicing, if the data streams are transmitted; and
- (e) correcting said overflow condition.

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31. (3x Amended) A method for splicing digitally encoded data streams, including an old data stream and a new data stream, comprising:

- (i) determining a splice-out point of the old data stream;
- (ii) determining a splice-in point of the new data stream;
- (iii) modifying a current timing reference of the new data stream to correspond with the splice-out point of the old data stream and the splice-in point of the new data stream, thereby forming a modified new data stream timing reference; and
- (iv) aligning a portion of the new data stream with a portion of the old data stream according to said modified new data stream timing reference, such that a transition

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from the old data stream to the new data stream, during playback, will be substantially imperceptible.

34. (2x Amended) The method according to claim 31, wherein said data streams include video and audio data, wherein step (iii) includes determining a video splice-out point and an audio splice-out point, and wherein step (iv) includes determining a video splice-in point and an audio splice-in point.

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39. (2x Amended) A method for splicing digitally encoded data streams, including an old data stream and a new data stream, comprising:

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- (i) determining a first source for the old data stream and a second source for the new data stream;
- (ii) modifying a current timing reference of the new data stream to correspond with a splice-out point of the old data stream and a splice-in point of the new data stream, thereby forming a modified new data stream timing reference; and
- (iii) aligning a portion of the new data stream with a portion of the old data stream according to said modified new data stream timing reference, such that a transition from the old data stream to the new data stream, during playback, will be substantially imperceptible.

42. (2x Amended) A method for splicing digitally encoded data streams, including an old data stream and a new data stream, comprising:

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- (a) modifying a current timing reference of the new data stream to correspond with a splice-out point of the old data stream and a splice-in point of the new data stream, thereby forming a modified new data stream timing reference, wherein at least one of said data streams is MPEG encoded; and
- (b) aligning a portion of the new data stream with a portion of the old data stream according to said modified new data stream timing reference, such that a transition

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from the old data stream to the new data stream, during playback, will be substantially imperceptible.

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44. (2x Amended) The method according to claim 42, wherein step (a) is followed by transmitting a portion of the old data stream.

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45. (3x Amended) The method according to claim 42, wherein step (b) is followed by transmitting the portion of the new data stream.

GS11

49. (3x Amended) A computer-readable storage medium storing program code for causing a computer to perform the steps of:

determining a new data stream pair to be spliced contemporaneously with another data stream pair; and

initiating program code for splicing said new data stream pair;

creating at least one data storage structure for storing portions of said old and new data streams;

storing portions of said old and new data streams in said at least one data storage structure;

determining a splice-out point within an old data stream;

determining a splice-in point within a new data stream; and

determining a new data stream real-time transmit start time.

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80. (3x Amended) A digitally encoded data stream transmitter comprising:

shifting means for determining an amount by which scheduled transmission times of data stream portions are to be accelerated and delayed, such that certain data portions are accelerated to make up for previously introduced delay of other data portions, wherein said data stream portions include a new data stream portion with new data

stream data and said new data stream data is received as a plurality of data packets;  
and

transmitting means for transmitting said data stream portions at transmission times  
accelerated and delayed by the amount determined by said shifting means.

102. (Amended) A method for removing an overflow condition comprising the steps of:

obtaining first and second digitally encoded data stream portions, with at least one of the  
first and second digitally encoded data stream portions containing no special splicing  
characters;

outputting the first digitally encoded data stream portion;

detecting whether a portion of the output of the second digitally encoded data stream  
portion would cause said overflow condition;

delaying in real time a part of said second data stream portion for a delay time that  
prevents said overflow condition; and

accelerating in real time a subsequent portion of the second data stream that follows the  
portion of the second data stream portion to substantially make-up for said delay  
time.

106. (Amended) A method for removing an overflow condition comprising the steps of:

detecting a first digitally encoded data stream portion causing said overflow condition;

delaying said first data stream portion for a delay time that prevents said overflow  
conditions; and

accelerating a second data stream portion that follows said first data stream portion to  
substantially make-up for said delay time,

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wherein the steps of delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of program clock references.

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116. (Amended) A method for removing an overflow condition comprising the steps of:

detecting a first digitally encoded data stream portion causing said overflow condition;  
delaying said first data stream portion for a delay time that prevents said overflow conditions; and

accelerating a second data stream portion that follows said first data stream portion to substantially make-up for said delay time,

wherein the steps of delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of video frames and at least some of the video frames in each of the first data stream portion and the second data stream portion each contain a decode time stamp field.

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119. (Amended) A method for removing an overflow condition comprising the steps of:

detecting a first digitally encoded data stream portion causing said overflow condition;  
delaying said first data stream portion for a delay time that prevents said overflow conditions; and

accelerating a second data stream portion that follows said first data stream portion to substantially make-up for said delay time,

wherein:

the steps of detecting, delaying and accelerating are performed in real-time;

the step of delaying inserts null packets;

the step of accelerating deletes other null packets; and

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the steps of delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of program clock references.

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124. (Amended) An apparatus for removing an overflow condition comprising:

means for detecting a first digitally encoded data stream portion causing said overflow condition;

means for delaying said first data stream portion for a delay time that prevents said overflow condition; and

means for accelerating a second data stream portion that follows said first data stream portion to substantially make-up for said delay time,

wherein the means for delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of program clock references.

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133. (Amended) An apparatus for removing an overflow condition comprising:

means for detecting a first digitally encoded data stream portion causing said overflow condition;

means for delaying said first data stream portion for a delay time that prevents said overflow condition; and

means for accelerating a second data stream portion that follows said first data stream portion to substantially make-up for said delay time,

wherein:

the means for delaying and accelerating operate upon the first data stream portion and the second data stream portion, respectively, that each contain a plurality of video frames; and



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at least some of the video frames in each of the first data stream portion and the second data stream portion each contain a decode time stamp field.

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136. (Amended) A method for correcting overflow of a digitally encoded data stream decoder during splicing of data stream portions including an old data stream portion and a new data stream portion, comprising causing a delay of a scheduled transmission time of at least a part of the new data stream data portion and an acceleration of a subsequent part of the new data stream portion, wherein the steps of causing the delay and the acceleration operate upon the old data stream portion and the new data stream portion, respectively, that each contain a plurality of program clock references.

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139. (Amended) The method according to claim 138 wherein at least some of the video frames in each of the old data stream portion and the new data stream portion further include a presentation time stamp field.

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144. (Amended) A method for correcting overflow of a digitally encoded data stream decoder during splicing of data stream portions including an old data stream portion and a new data stream portion, comprising causing a delay of a scheduled transmission time of at least a part of the new data stream data portion and an acceleration of a subsequent part of the new data stream portion, wherein:

the steps of causing the delay and the acceleration operate upon the old data stream portion and the new data stream portion, respectively, that each contain a plurality of video frames; and

at least some of the video frames in each of the old data stream portion and the new data stream portion each contain a decode time stamp field.

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146. (Amended) A method for correcting overflow of a digitally encoded data stream decoder during splicing of data stream portions including an old data stream portion and a new data stream portion, comprising causing a delay of a scheduled transmission time of at least a part of

the new data stream data portion and an acceleration of a subsequent part of the new data stream portion, wherein:

the steps of causing the delay and the acceleration are performed in real-time; and

the steps of causing the delay and the acceleration operate upon the old data stream portion and the new data stream portion, respectively, that each contain a plurality of program clock references.